

**Work Order ID 60988**

August 3, 2010 2:56:57 PM



Page 1

Item ID: D350-636-012

Accept



Setup Start



Revision ID:

Stop



Item Name: Skidtube RH

Start Date: 8/03/10 Start Qty: 1.00



Cust Item ID:

Required Date: 8/12/10 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: PL Date: 10-8-03 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D2750

Rev F

0.00

100



DC

DOCUMENT CONTROL

Memo

0.00

Document Control

Photocopy blue file and type labels per PPP D350-636-012 CHG 005

8/10/10/30

HJ for BG 10-8-27

B60988

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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110

0.00



Skidtubes

Skidtubes

Skidtubes

**Memo**

0.00

1- Pick D2600-3 Bent

2- Deburr FWD and AFT ends, remove bending marks. Scribe batch# inside AFT end per dwg D2750

3- Drill pilot holes for blade fitting bolt holes using DT8983. Open to 0.500", deburr.

4- Locate DT8329 off of blade fitting bolt holes and drill pilot holes for blade fitting

5- Drill fwd step holes using DT9616. Ensure proper positioning.

6- Drill pilot holes as per Dwg D2750 sheet 4 (D2750-2 details). Drill using drill Jig DT8150 & DT8863A for first side only DT8863B for second side (detail B)  
\*\*\*ONLY DRILL ONE SIDE OF FWD SADDLE HOLES USING DT8150\*\*\*7- Clecko DT8863B on second side of tube and drill pilot holes for detail B.  
\*\*\*SECOND SIDE\*\*\*

8- Clecko DT9642 and drill fwd saddle holes on second side, ensure proper positioning.

9-Open up holes for Detail B to 0.375" (4 holes per side) and blade fitting location holes to 0.500" (total of 4 holes per side) as per dwg D2750. Open up holes for ground handling and detail C to 0.500" (8 holes per side)

10-Drill pilot holes for wearplates as per Dwg D2750 using DT8108 open to

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0.297".

11-Open up holes of Detail A to 0.297" (total of 2 holes per side)

*> DP 10-8-5*

12-Weld D2744 Cap as per Dwg D2750 and QSI 004. Fill grooves in bend left from bending as per QSI 004

A/R Aluminum Rod batch: ☐

*M114242 BE 10/08/10*  
*BE 10/08/10*

13-Grind welds flush as per Dwg D2750

120



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

*S 10/08/10*

*BE 10*

130



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

*S 10/08/10*

*70*

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140  HandFinish Hand Finishing	Chemical Conversion Coat per QSI005 4.1  Memo	0.00  0.00				(14)	2	NB 10-08-10	
150  QC Quality Control	QC3- Inspect Part Finish  Memo	0.00  0.00				(1x)		2E 10-08-10	

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Run Start



Approvals: Process Plan: Date: Tooling: Date:

Stop



QC: Date: SPC (Y/N): Date:

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160

0.00



Skidtubes

Skidtubes

Memo

0.00

1-Open up holes of Detail L and ground handling to 0.625" (total of 8 holes per side) as per dwg D2750.

2-Open up holes of Detail K to 0.750" (total of 4 holes per side) as per dwg D2750.

3-Open float holes to .500" (4 per Side)

4-Chamfer holes of Detail K, L, ground handling and float holes per dwg D2750 (welding instructions on sheet 9)

5-Deburr and blow out all chips from inside of tube

6-Prepare tube for welding, remove alodine as required.

7-Bond web D2739 in place as per QSI 015

A/R ☐ Sikaflex-291 batch: M115114 ☐ ☐  
exp. date: 11-1-30

8- Weld spacers D3490-1, D3490-3 and D2743 as per dwg D2750 & QSI004 (welding instructions on sheet 9)

A/R ☐ Aluminum Rod batch: M114877

9- At section AP-AP drill out x-bolt spacer to 0.404"

10-Grind welds flush as per Dwg D2750

11-Spot face ground handling holes section (total of 4 places per side) as per

*[Handwritten signature]*  
**10-8-11**  
**BE 10-8-23**  
**BE 10-8-16**  
**BE 10-8-16**  
**BE 10-8-17**

W/O:		WORK ORDER CHANGES					
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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

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dwg D2750

12-Deburr holes

BE 10-8-17

170



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

8/10/10 7

180



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

8/10/10 7

D

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190  HandFinish	Pressure Wash per QSI005 4.3	0.00				<u>ml</u>	<u>10</u>	<u>08</u>	<u>17</u> ①
Hand Finishing	Memo Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.	0.00							
200  Powdercoat	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00				<u>ml</u>	<u>10</u>	<u>08</u>	<u>18</u> ①
Powder Coating	Memo START TIME: <u>7:00</u> OVEN TEMPERATURE: <u>320°</u> FINISH TIME: <u>7:35</u>	0.00							
210  QC	QC3- Inspect Part Finish	0.00				<u>=&gt; ml</u>	<u>10</u>	<u>08</u>	<u>19</u>
Quality Control	Memo ✓ Inspect for foreign object per QSI 024	0.00				<u>1</u>	<u>0</u>		

W/O:		WORK ORDER CHANGES					
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Run Start



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Stop



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220

0.00



HandFinishing

HandFinish

Memo

Hand Finishing

✓ Install inserts as per dwg D2750

0.00

=) JH

10/08/19

1

9

230

0.00



HandFinishing

HandFinish

Memo

Hand Finishing

✓ 1-Inspect for Foreign Objects

2-Spray inside of tube with "LPS-3"

✓ batch: N/A

3-Install blade fitting D3488-042, wearshoes and ground handling hardware as per dwg D2750

SIKA FLEX 241

BATCH: 1115114

EXP DATE: 11/01

✓ 4-assemble o-ring to plug as per dwg D3492 and apply o-ring lube A/R 55-o-ring lube batch: 1114189

✓ 5-Coat all exposed fasteners with "LPS Procyon" batch: 1114596

JH 10/08/25

W/O:		WORK ORDER CHANGES					
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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270		0.00							
	Packaging								
Packaging	Memo	0.00							
Packaging	Package as per PPP D350-636-012								
	<i>NAUH</i>								
280		0.00							
	QC21- Final Inspection - Work Order Release								
QC	Memo	0.00							
Quality Control									

*10/08/31**10/08/31*  
*CL1018131*

W/O:		WORK ORDER CHANGES					
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Work Order ID: 60988

Parent Item: D350-636-012

Parent Item Name: Skidtube RH



Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:I 02.09.25 Rearranged procedure steps KJ  
 IPP Rev:J 06-03-29 As per Rev D EC  
 IPP Rev:K 06-07.13 As per dsi9343 EC  
 IPP Rev:L 07-07-28 Added SS Wearplates(Rev E) JLM Verified By:EC  
 IPP Rev:M 08-04-22 update steps 4,13 DD verified by:EC  
 IPP Rev:N 08-09-23 revF as per dwg DD verified by:ec IPP Rev:O  
 10.06.22 revise seq110 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
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ALS4-1032-225		Purchased	No			220	Each	5,957.000	38	38			
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Insert

Location	Loc Qty	Loc Code
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PK011	5957	
110768	5957	

AN3C5A		Purchased	No			230	Each	1,364.000	34	34			
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Bolt

Location	Loc Qty	Loc Code
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ST350	1354	
114330	11	
115015	743	
115108	300	
115316	300	
ST351	10	
113121	10	

AN3C6A		Purchased	No			230	Each	425.0000	4	4			
--------	--	-----------	----	--	--	-----	------	----------	---	---	--	--	--



BOLT

Location	Loc Qty	Loc Code
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ST351	425	
111982	425	

x38 JH 10/08/19

x34 JH 10/08/19

x0 JH 10/08/19

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Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

AN6C44A

Purchased

No

230

Each

177.0000

4

4



BOLT



Location

Loc Qty

Loc Code

FG

2

103964

2

ST344

175

111649

2

114653

1

114784

47

114941

75

115030

50

x 4 10/08/19

AN8C35A

Purchased

No

230

Each

58.0000

1

1



BOLT



Location

Loc Qty

Loc Code

FP

1

110847

1

ST346

57

114442

27

115188

30

x 1 10/08/19

AN960C10L

NAS1149C0332

Purchased

No

230

Each

29.0000

38

38



washer



Location

Loc Qty

Loc Code

ST245

29

107534

29

115000

x 38 10/08/19

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Shop Packet Print

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W/O:		WORK ORDER CHANGES					
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Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

AN960C816L

Purchased

No

230

Each

23.0000

1

1



WASHER

Location

Loc Qty

Loc Code

ST348

23

110584

20

111424

3

x1 M 10/08/19

D2745

Manufactured

No

230

Each

169.0000

8

8



Bushing

Location

Loc Qty

Loc Code

ST023

169

52311

5

59112

164

x8 M 10/08/19

D3488-042

Manufactured

No

230

Each

17.0000

1

1



Blade Fitting Assembly, RH

Location

Loc Qty

Loc Code

FP008

17

53918

5

59643

12

x1 M 10/08/19

D3492-041

Manufactured

No

230

Each

93.0000

8

8



Plug Assembly

Location

Loc Qty

Loc Code

FP013

93

59114

24

59420

69

x8 M 10/08/19

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Page 3

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Work Order ID: 60988

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

D3492-043

Manufactured No

230

Each

51.0000

8

8



Plug Assembly

Location

Loc Qty

Loc Code

FP

2

54682

2

FP013

49

59117

1

59190

4

59421

14

60712

30

B61207

XL 10/08/26  
XL 10/08/19

D3535-25

Manufactured No

230

Each

24.0000

1

1



Wearshoe

Location

Loc Qty

Loc Code

FP18

24

59623

24

XL 10/08/19

D3536-25

Manufactured No

230

Each

29.0000

1

1



Gasket

Location

Loc Qty

Loc Code

FP12

29

58820

5

59625

24

XL 10/08/19

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Work Order ID: 60988



Parent Item: D350-636-012



Parent Item Name: Skidtube RH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

D3537-1

Manufactured No

230

Each

13.0000

3

3



Wearpad

Location

Loc Qty

Loc Code

FP

1

B60192

x3 M 10/08/19

55465

1

FP17

12

57713

3

59593

9

D3631-1

Manufactured No

230

Each

571.0000

8

8



Washer

Location

Loc Qty

Loc Code

ST072

297

60755

297

ST076

274

52693

206

54388

68

x8 M 10/09/19

D3672-1

Manufactured No

230

Each

1,011.000

4

4



Phenolic Washer

Location

Loc Qty

Loc Code

ST077

993

51674

5

52505

988

ST117

18

34470

18

x4 M 10/09/19

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Work Order ID: 60988

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

D3791-1      Manufactured      No      230      Each      20.0000      1      1



Wearplate



Location      Loc Qty      Loc Code

FP17      20

58573      11

59626      9

D3793-1      Manufactured      No      230      Each      15.0000      1      1



Wearshoe



Location      Loc Qty      Loc Code

FP18      15

59151      2

59630      13

D3793-3      Manufactured      No      230      Each      13.0000      1      1



Wearshoe



Location      Loc Qty      Loc Code

FP18      12

59631      12

FP19      1

57947      1

D3794-1      Manufactured      No      230      Each      19.0000      1      1



Gasket



Location      Loc Qty      Loc Code

FP010      19

57942      18

59627      1

✓ JH 10/08/19

✓ JH 10/08/19

✓ JH 10/08/19

✓ JH 10/08/19

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

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Work Order ID: 60988

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

D3794-3

Manufactured No

230

Each

24.0000

1

1



Gasket

Location

Loc Qty

Loc Code

FP10

12

60826

12

FP18

12

56066

11

59153

1

✓ 1 10/08/19

MS21043-6

Purchased

No

230

Each

726.0000

4

4



NUT

Location

Loc Qty

Loc Code

ST301

726

112314

726

✓ 4 10/08/19

MS21083C8

Purchased

No

230

Each

58.0000

1

1



NUT

Location

Loc Qty

Loc Code

ST303

58

113845

7

114934

51

✓ 1 10/08/19

NAS1611-010

Purchased

No

230

Each

267.0000

8

8



O-RING

Location

Loc Qty

Loc Code

FP

267

110715

100

110915

167

PTO =)

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W/O: 60988		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
10/08/19	230	Replace NAS 1611-010 "O" Rings with D2594-3 B59358 "O" Rings	JH	10/08/19	X8		S 10/08/19

Part No: D350-636-012 PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Work Order ID: 60988

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

NAS1611-013

Purchased

No

230

Each

67.0000

8

8



O-RING

Location

Loc Qty

Loc Code

FP

67

114451

51

114496

16

x8 34 10/08/19

AN8C21A

Purchased

No

250

Each

59.0000

2

2



BOLT

Location

Loc Qty

Loc Code

ST345

59

113558

19

114653

40

2

AN960C816L

Purchased

No

250

Each

23.0000

1

2



WASHER

Location

Loc Qty

Loc Code

ST348

23

110584

20

111424

3

2

D2741

Manufactured

No

250

Each

22.0000

1

1



Blade, 350 Skidtube

Location

Loc Qty

Loc Code

ST466

22

55905

2

57949

20

1

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Page 8

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Work Order ID: 60988

Parent Item: D350-636-012

Parent Item Name: Skidtube RH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

D3493-1

Manufactured No

250

Each

55.0000

2

2



Washer

Location

Loc Qty

Loc Code

ST065

55

59127

25

60873

30

Manufactured No

250

Each

33.0000

2

2

D3532-1



Spacer

Location

Loc Qty

Loc Code

ST068

33

59426

11

60510

22

Purchased No

250

Each

844.0000

2

2

D3672-13



Phenolic Washer

Location

Loc Qty

Loc Code

ST077

844

54363

844

Purchased No

250

Each

58.0000

1

2

MS21083C8



NUT

Location

Loc Qty

Loc Code

ST303

58

113845

7

114934

51

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action-Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Work Order ID: 60988



Parent Item: D350-636-012



Parent Item Name: Skidtube RH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

D2600-3-BENT

Manufactured No

110

Each

16.0000

1

1



Extrusion Bent

Location

Loc Qty

Loc Code

LG

16

59410

16

110

Each

38.0000

1

*DP 10-8-5*

D2744

Manufactured No



Cap

Location

Loc Qty

Loc Code

LG

38

51922

2

59198

36

160

Each

1.0000

1

1

*\$ BE 10/08/10*

D2739

Manufactured No



350 I Beam

Location

Loc Qty

Loc Code

LG

1

59406

160

Each

299.0000

8

8

*DP 10-8-11*

D2743

Manufactured No



Crossbolt Spacer

Location

Loc Qty

Loc Code

LG

299

50281

10

57953

2

59111

287

*8 BE 10-8-12*

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Page 10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

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Work Order ID: 60988



Parent Item: D350-636-012



Parent Item Name: Skidtube RH

Start Date: 8/03/10

Required Date: 8/12/10

Start Qty: 1.00

Required Qty: 1.00

D3490-3

Manufactured No

160

Each

54.0000

4

4



Cross Bolt Spacer

Location

Loc Qty

Loc Code

LG

54

59229

14

60294

40

4 BE 10/08/12

D3490-1

Manufactured No

160

Each

19.0000

4

4



Cross Bolt Spacer

Location

Loc Qty

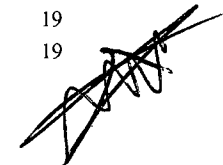
Loc Code

LG

19

59424

19



3 BE 10/08/12  
B 61217 (X1) BE 10/08/12

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

8

7

6

5

4

3

2

1

QTY -041	QTY -042	QTY -043	QTY -044	PART NUMBER	DESCRIPTION
X				D2750-041	350 SKIDTUBE ASSEMBLY, LH
	X			D2750-042	350 SKIDTUBE ASSEMBLY, RH
		X		D2750-043	350 SKIDTUBE ASSEMBLY, LH
			X	D2750-044	350 SKIDTUBE ASSEMBLY, RH
1	1	1	1	D2739	WEB
8	8	8	8	D2743	SPACER
1	1	1	1	D2744	CAP
8	8	8	8	D2745	BUSHING
1				D2750-1	SKIDTUBE WELDMENT, LH
	1			D2750-2	SKIDTUBE WELDMENT, RH
		1		D2750-3	SKIDTUBE WELDMENT, LH
			1	D2750-4	SKIDTUBE WELDMENT, RH
1		1		D3488-041	BLADE FITTING, LH
	1		1	D3488-042	BLADE FITTING, RH
4	4	4	4	D3490-1	SPACER
4	4			D3490-3	SPACER
		4	4	D3490-5	SPACER
8	8	8	8	D3492-041	PLUG ASSEMBLY
8	8			D3492-043	PLUG ASSEMBLY
		8	8	D3492-045	PLUG ASSEMBLY
1	1	1	1	D3535-25	WEARSHOE
1	1	1	1	D3536-25	GASKET
3	3	3	3	D3537-1	WEARPAD
8	8	8	8	D3631-1	WASHER
1	1	1	1	D3791-1	WEARPLATE
1	1	1	1	D3793-1	WEARSHOE
1	1	1	1	D3793-3	WEARSHOE
1	1	1	1	D3794-1	GASKET
1	1	1	1	D3794-3	GASKET
38	38	38	38	ALS4-1032-225	INSERT (OR ALS7-1032-225, AKS4-1032-225, AELS-1032-225)
34	34	34	34	AN3C5A	BOLT
4	4	4	4	AN3C6A	BOLT
4	4	4	4	AN6C44A	BOLT
1	1	1	1	AN8C35A	BOLT
38	38	38	38	AN960C10L	WASHER
1	1	1	1	AN960C816L	WASHER
4	4	4	4	MS21043-6	NUT
1	1	1	1	MS21083C8	NUT
4	4	4	4	NAS1515H3L	WASHER

## GENERAL NOTES:

- 1) MATERIAL: MAKE D2750-1/-2/-3/-4 FROM D2600-3 EXTRUSION (INITIAL LENGTH = 120.0).
- 2) FINISH:  
ACID ETCH, ALONDE ASSEMBLY PER DART QSI 005 4.1 PRIOR TO INSTALLING D2739 WEB.  
POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED TO 1.0 ABOVE SKIDTUBE CENTER-LINE PER DART 005 4.4 (OPTIONAL).
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: D2750-041/-042/-043/-044 = 26.5 LBS
- 8) WELD PER DART QSI 004
- 9) INSTALL ALS4-1032-225 INSERTS AFTER FINISH AS INDICATED. DRILL 'F' SIZE HOLES ( $\phi 0.297$ ) FOR WEARSHOE INSERTS
- 10) FINAL CONFIGURATION SHOULD HAVE THE FOLLOWING MINIMUM MECHANICAL PROPERTIES:  
MINIMUM YIELD TENSILE STRENGTH = 35 KSI  
MINIMUM ULTIMATE TENSILE STRENGTH = 38 KSI
- 11) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS.  
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF  
POWDER COATING WITH MEK DEGREASER.
- 12) SPACER AND PLUG INSTALLED SAME AS SECTION AJ-AJ EXCEPT HORIZONTAL
- 13) SPACER AND PLUG INSTALLED SAME AS SECTION AP-AP EXCEPT HORIZONTAL

SHC  
RE  
ENGINE  
UNCONTROLLED  
SUBJECT TO AND  
WITH ALL NOTED  
WORK ORDER  
NO. 40989  
B10803

RELEASED  
68 07 12 14

F	INCORPORATE DSI 9413; QTY (3) D3537-1 WAS QTY (5) (ZN C8-1); D3791-1/-3 REPLACES D3535-13/-35 (ZN C8-1); D3794-1/-3 REPLACES D3536-13/-35 (ZN B8-1); ADD D3791-1 (ZN C8-1); WEARSHOE HOLES UNDER FWD/AFT SADDLE REMOVED (8 PL). WEARSHOE HARDWARE QTY UPDATED (ZN B8-1); D3488-041/-042 HARDWARE UPDATED (ZN C1-8, 9, 10, 11); ADD NOTE 12 AND 13 (ZN A6-1); REASON: REF. NCR 08-043	PH	08.07.16
E	CHANGE TO STAINLESS STEEL WEARPLATES; ADD RUBBER GASKETS, CHANGE INSERTS: ADD D3631-1; REMOVE QTY (38) NAS1515H3L; REMOVE QTY (10) NAS1515H8L; REMOVE D2741. QTY (2) AN960C816; REMOVE QTY (2) MS21083C8	CB	07.05.17
D	ADD HOLES AND SPACERS FOR APICAL FLOATS; INCORPORATE DEO 9133/9157	PH	06.01.05
C	ADD D2750-3/D2750-4; INCORPORATE D2738 AND D2740	CP	98.11.18
B	CHANGE MS24694-S293 TO AN8-16A	CP	98.09.01
A	NEW ISSUE	DS	98.04.16
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	08.07.16		

DART AEROSPACE USA, INC. PORT HADLOCK, WA	
DRAWING NO. D2750	REV. F SHEET 1 OF 11
TITLE 350 SKIDTUBE ASSEMBLY	SCALE NTS
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**Dart Aerospace Ltd**

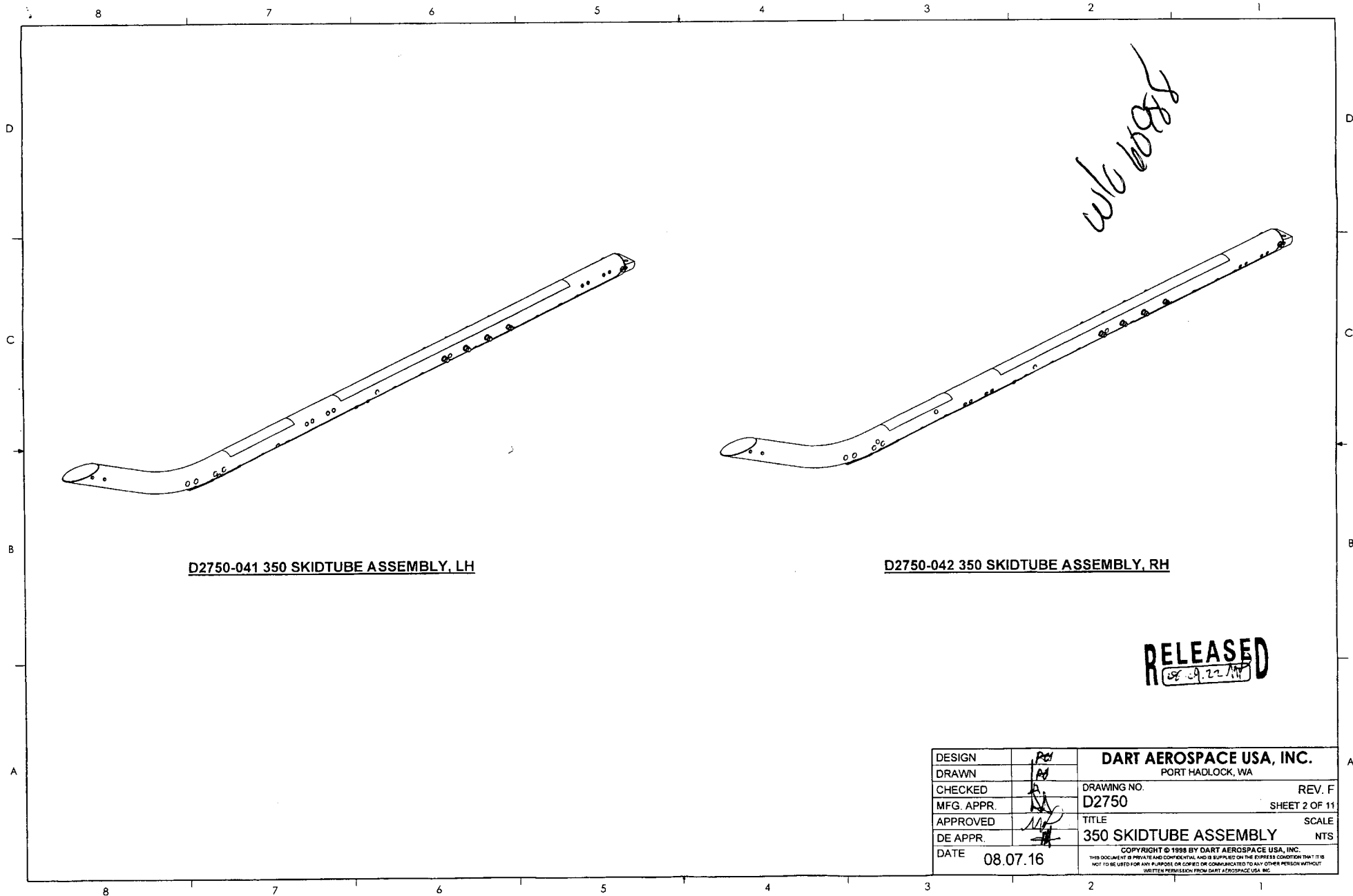
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



D2750-041 350 SKIDTUBE ASSEMBLY, LH

D2750-042 350 SKIDTUBE ASSEMBLY, RH

RELEASED  
08.07.16

DESIGN	PC	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	AM	PORT HADLOCK, WA	
CHECKED	AM	DRAWING NO. D2750	REV. F
MFG. APPR.	AM	SHEET 2 OF 11	
APPROVED	AM	TITLE	SCALE
DE APPR.	AM	350 SKIDTUBE ASSEMBLY NTS	
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

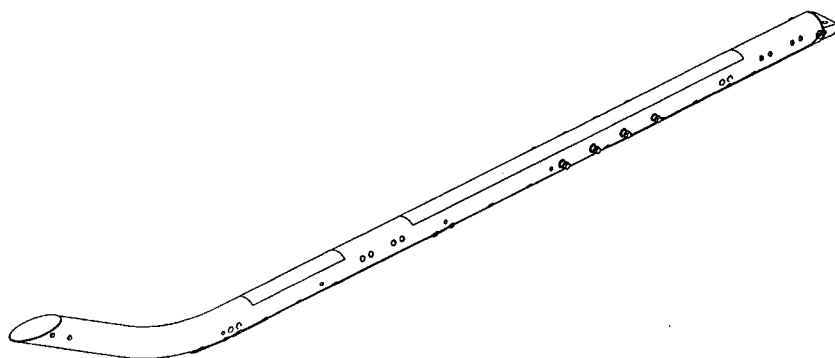
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

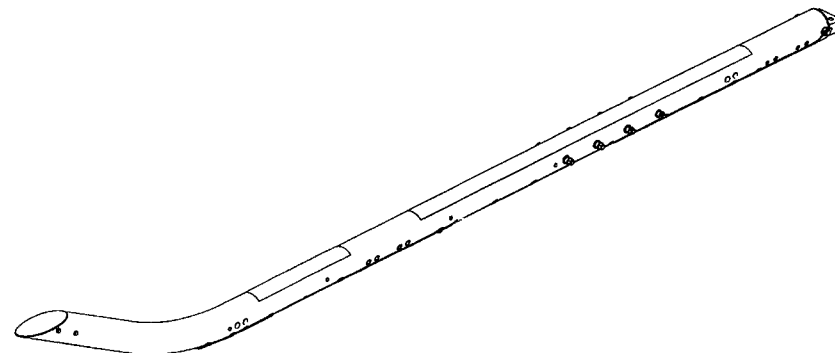
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

WLO 60988



D2750-043 350 SKIDTUBE ASSEMBLY, LH



D2750-044 350 SKIDTUBE ASSEMBLY, RH

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68-09-22/111

DESIGN	PH	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	PH	PORT HADLOCK, WA	
CHECKED	PH	DRAWING NO.	REV. F
MFG. APPR.	MA	D2750	SHEET 3 OF 11
APPROVED	MA	TITLE	SCALE
DE APPR.	MA	350 SKIDTUBE ASSEMBLY	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

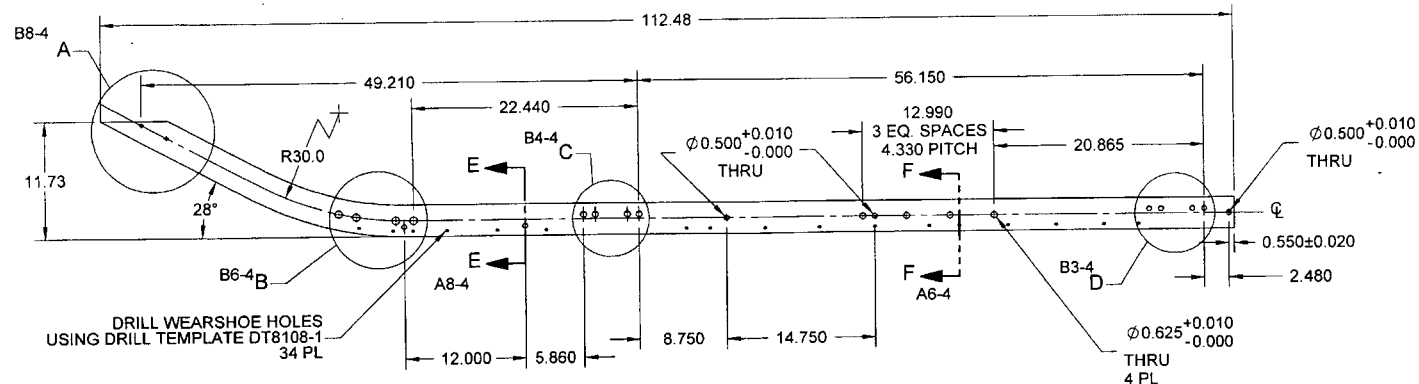
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

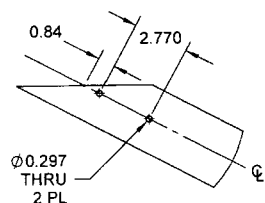
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

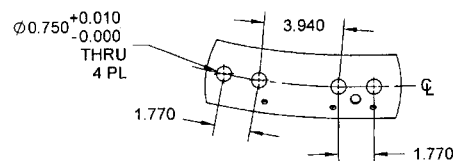




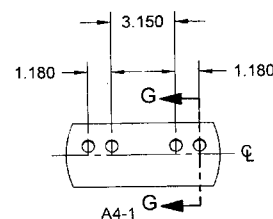
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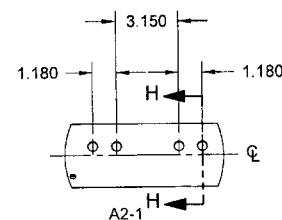
**DETAIL A**  
SCALE 2X



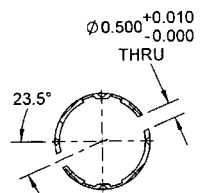
**DETAIL B**  
SCALE 2X



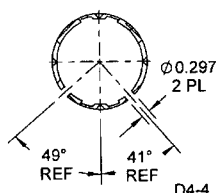
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SCALE 2X



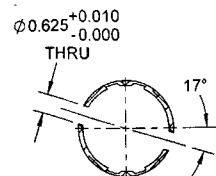
**DETAIL D**  
SCALE 2X



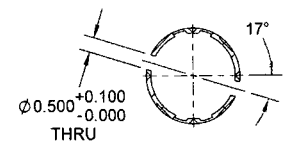
**SECTION E-E**  
SCALE 3X, 2 PL



**SECTION F-F**  
SCALE 3X, 17 PL



**SECTION G-G**  
SCALE 3X, 4 PL



**SECTION H-H**  
SCALE 3X, 4 PL

DESIGN	IPB
DRAWN	IPB
CHECKED	
MFG APPR.	
APPROVED	
DE APPR.	
DATE	08.07.16

**DART AEROSPACE USA, INC.**  
PORT HADLOCK, WA

DRAWING NO. **D2750** REV. F  
SHEET 4 OF 11  
TITLE **350 SKIDTUBE ASSEMBLY** SCALE NTS

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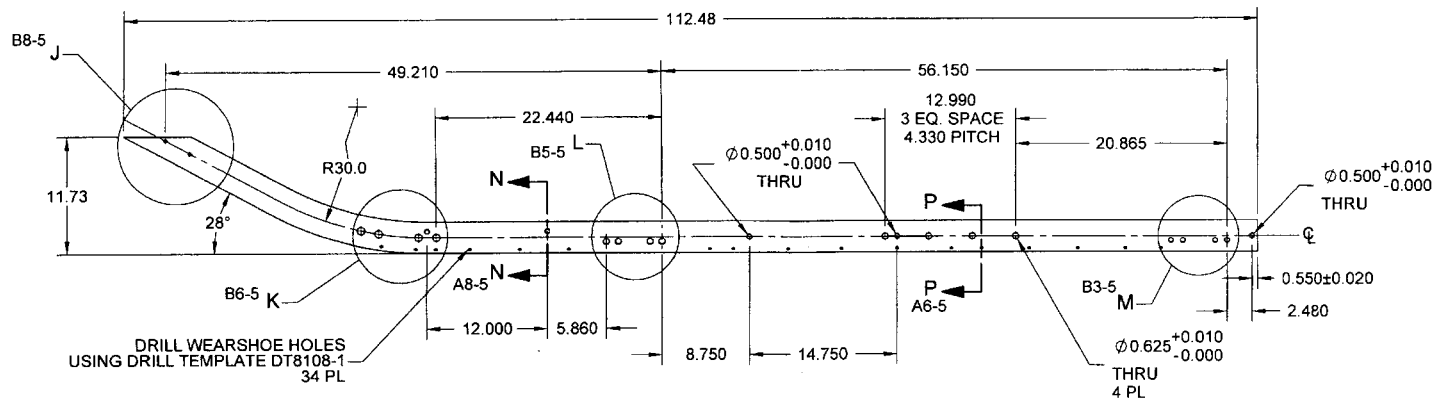
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

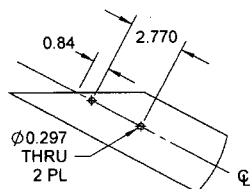
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

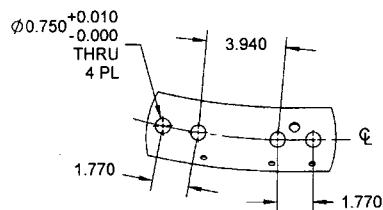
**NOTE:** Date & initial all entries



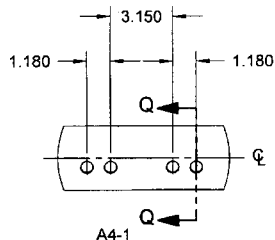
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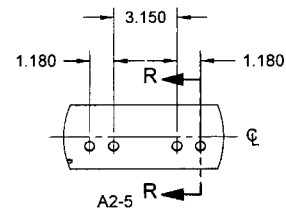
**DETAIL J**  
SCALE 2X



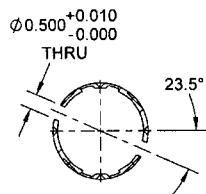
**DETAIL K**  
SCALE 2X



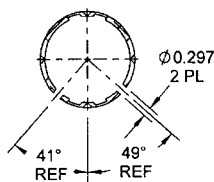
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SCALE 2X



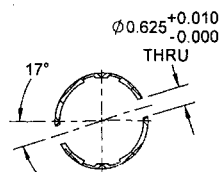
**DETAIL M**  
SCALE 2X



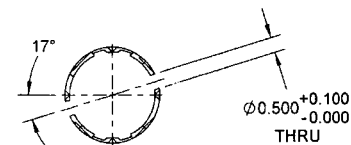
**SECTION N-N**  
SCALE 3X, 2 PL



**SECTION P-P**  
SCALE 3X, 17 PL



**SECTION Q-Q**  
SCALE 3X, 4 PL



**SECTION R-R**  
SCALE 3X, 4 PL

DESIGN	REV	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	REV	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2750	SHEET 5 OF 11
APPROVED		TITLE	SCALE
DE APPR.		350 SKIDTUBE ASSEMBLY	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

8

7

6

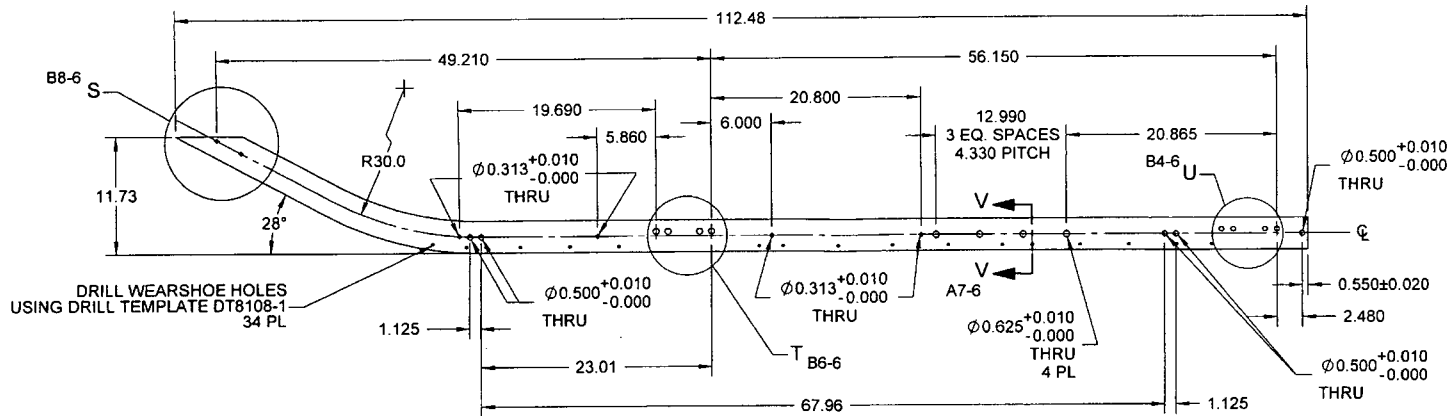
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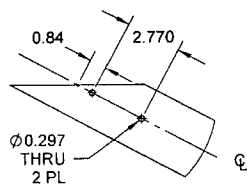
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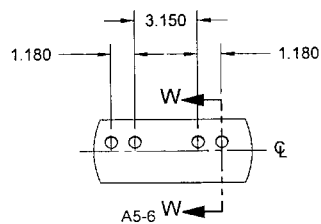
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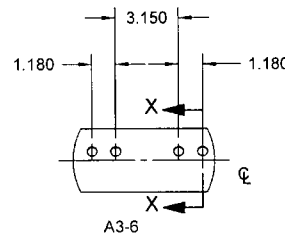
### D2750-3 LH SKIDTUBE



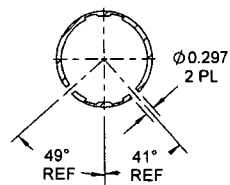
**DETAIL S**  
SCALE 2X



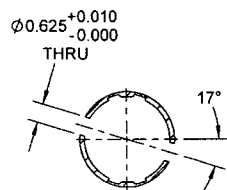
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SCALE 2X



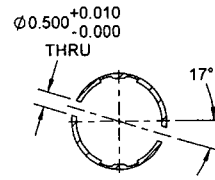
**DETAIL U**  
SCALE 2X



**SECTION V-V**  
SCALE 3X, 17 PL









**SECTION W-W**  
SCALE 3X, 4 PL



**SECTION X-X**  
SCALE 3X, 4 PL

**RELEASED**  
08-22-11

DESIGN		<b>DART AEROSPACE USA, INC.</b>	
DRAWN		PORT HADLOCK, WA	
CHECKED		DRAWING NO. <b>D2750</b>	REV. F
MFG. APPR.		SHEET 6 OF 11	
APPROVED		TITLE	SCALE
DE APPR.		<b>350 SKIDTUBE ASSEMBLY</b>	NTS
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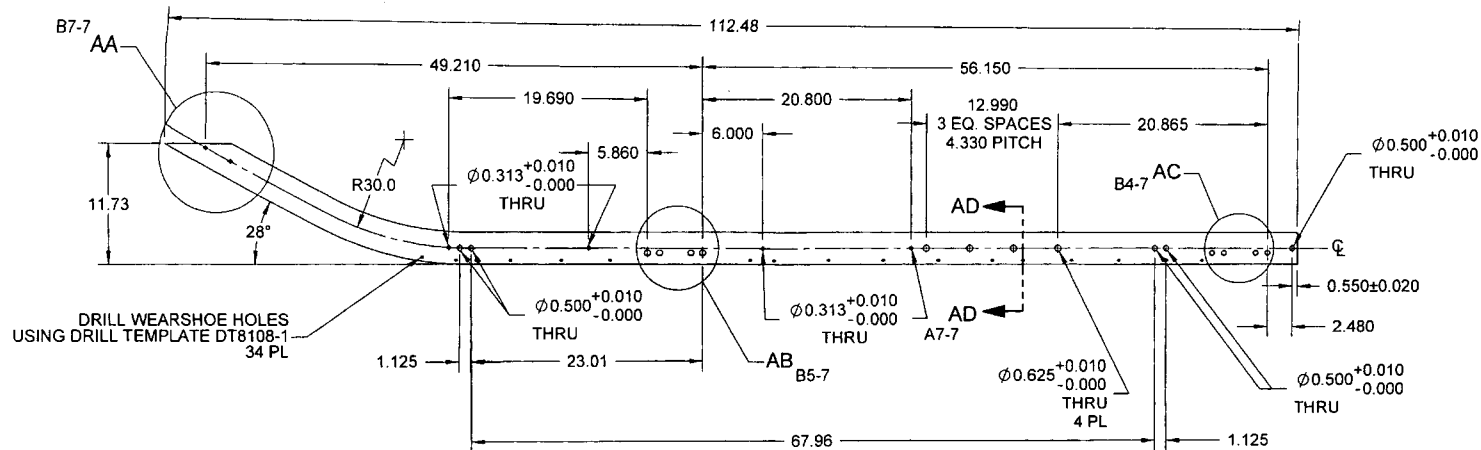
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

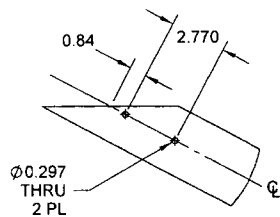
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

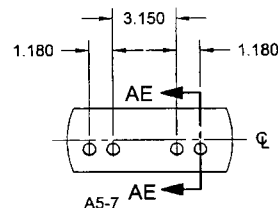
**NOTE:** Date & initial all entries



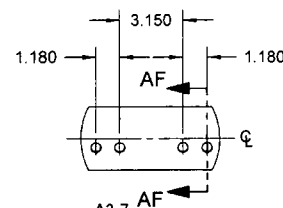
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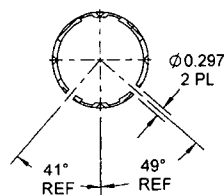
**DETAIL AA**  
SCALE 2X



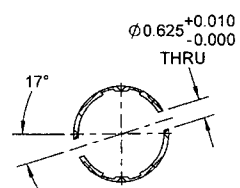
**DETAIL AB**  
SCALE 2X



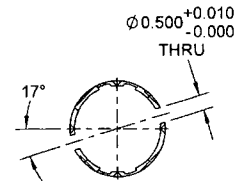
**DETAIL AC**  
SCALE 2X



**SECTION AD-AD**  
SCALE 3X, 17 PL



**SECTION AE-AE**  
SCALE 3X, 4 PL



**SECTION AF-AF**  
SCALE 3X, 4 PL

**RELEASED**  
08-09-2016

DESIGN	PAH	<b>DART AEROSPACE USA, INC.</b>	
DRAWN	PAH	PORT HADLOCK, WA	
CHECKED	PAH	DRAWING NO.	REV. F
MFG. APPR.	PAH	D2750	SHEET 7 OF 11
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DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

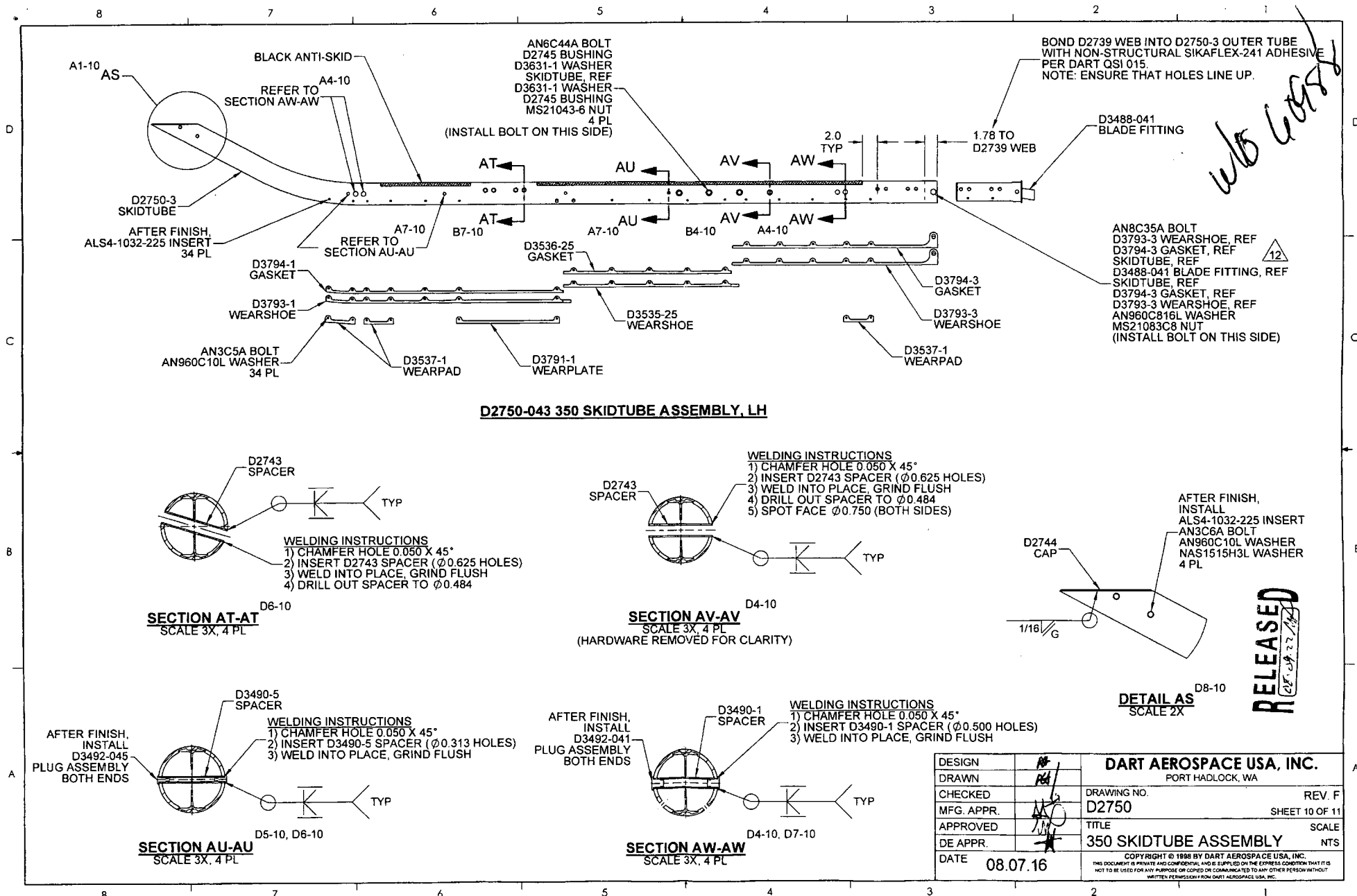
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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries





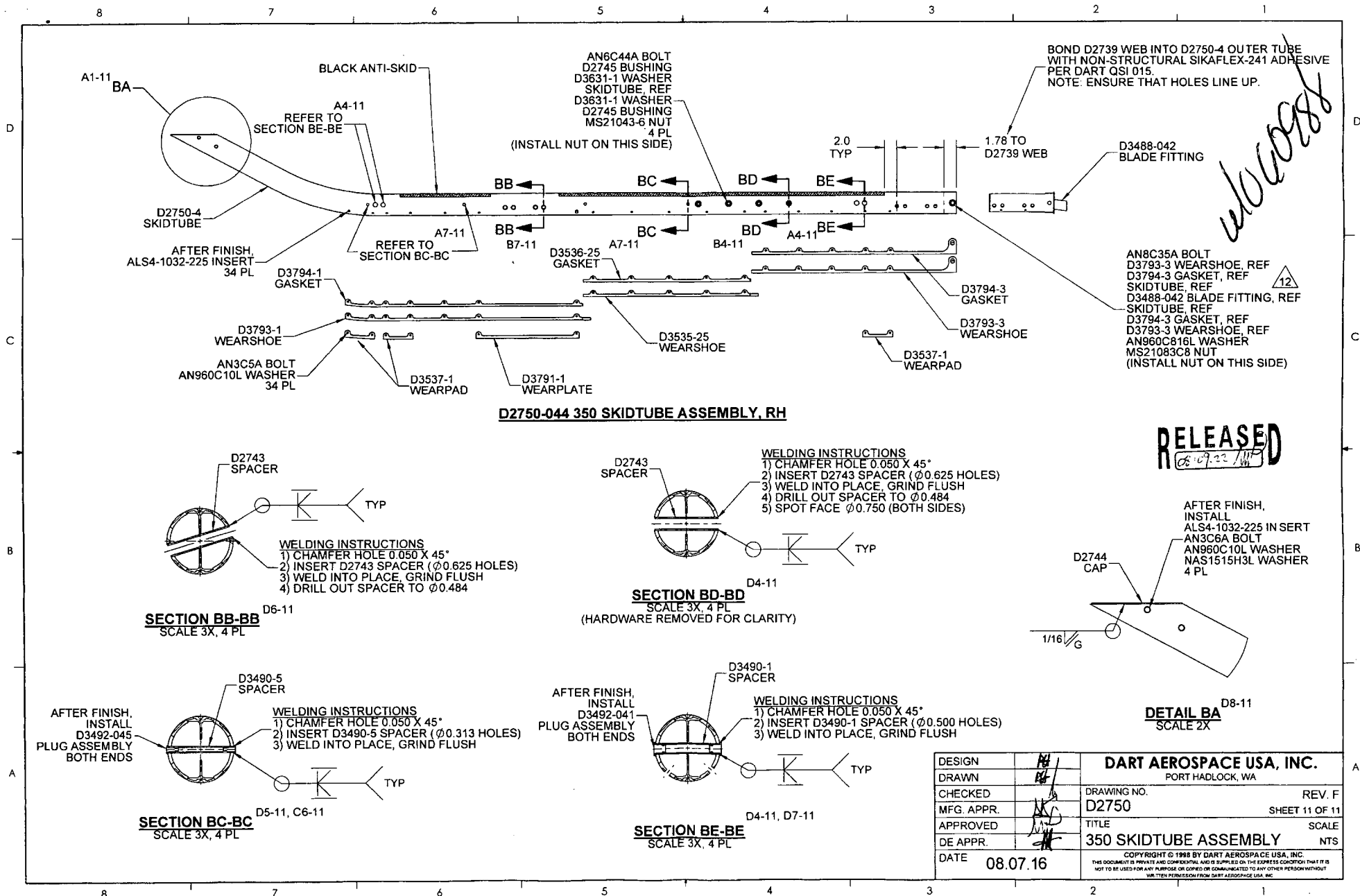
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Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

NO. 236

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barday Elliott  
Job number: 60988  
Part number: D350-236-012  
Description: 350 skid tube  
Welding Process: Tig[ ☒ ] Mig[ ☐ ]  
Base material: Aluminium  
Current: AC[ ☒ ] DC[ ☐ ]

TEST REQUIREMENTS AND RESULTS

Visual: pass[ ☒ ] fail[ ☐ ]  
Penetration: pass[ ☒ ] fail[ ☐ ]

UNACCEPTABLE

Cracks: pass[ ☒ ] fail[ ☐ ]  
Undercut: pass[ ☒ ] fail[ ☐ ]  
Pin holes: pass[ ☒ ] fail[ ☐ ]  
Overlap (cold lap): pass[ ☒ ] fail[ ☐ ]  
Porosity (surface): pass[ ☒ ] fail[ ☐ ]  
Coloration: pass[ ☒ ] fail[ ☐ ]

Qualifier [Signature] Date of Test Coupon 10.08.12

Welder [Signature] Date of Test Coupon 10.08.12

The above named individual is qualified in accordance with AWS D17.1.2001 to weld